ZERO A RIFLE COMBAT OPTIC (RCO) TO A SERVICE RIFLE

OVERVIEW

- ELEMENTS OF ZEROING
- RCO SIGHTING SYSTEM / WINDAGE & ELEVATION RULES
- ZEROING PROCEDURES
- FACTORS AFFECTING A ZERO
- TABLE 1A COURSE OF FIRE

TERMINAL LEARNING OBJECTIVE

Given a service rifle, Rifle Combat Optic (RCO), load bearing vest, magazine pouch, sling, (2) magazines, cleaning gear, ammunition, and a target, zero a Rifle Combat Optic (RCO) to a service rifle to ensure Point of Aim (POA) equals Point of Impact (POI) at 100 meters.

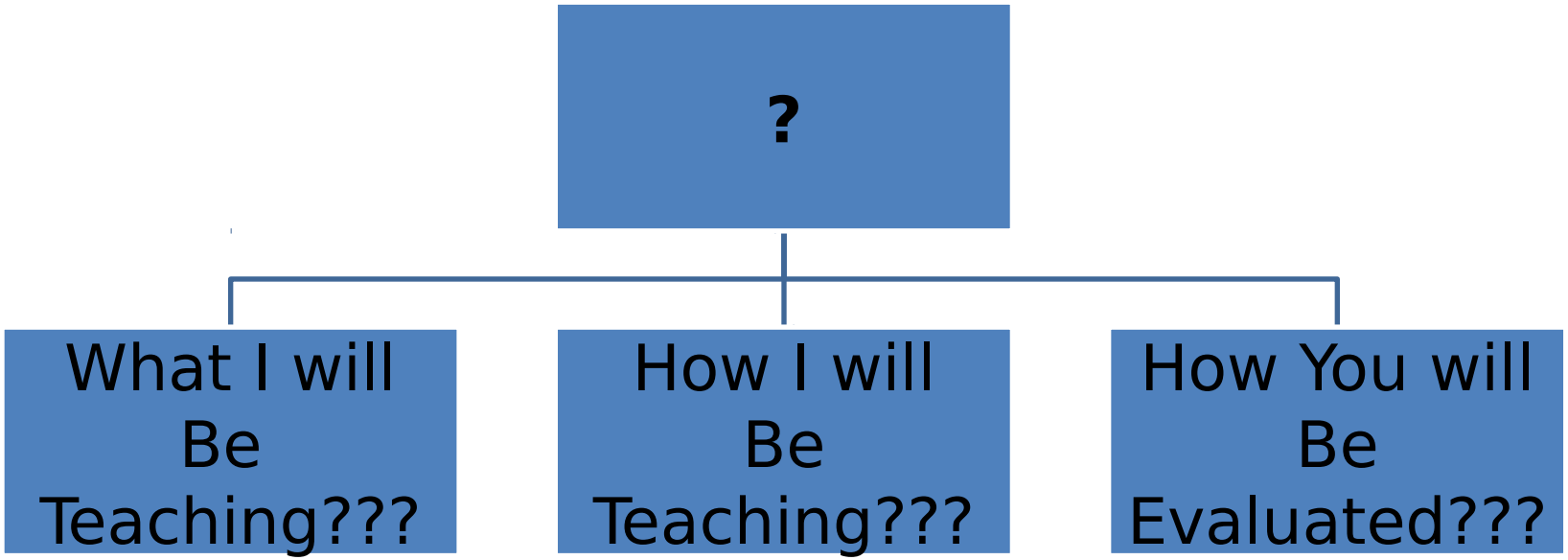
ENABLING LEARNING OBJECTIVES

- Given a service rifle, Rifle Combat Optic (RCO), load bearing vest, magazine pouch, common weapon sling, (2) magazines, cleaning gear, ammunition, and a target, mount and understand the elements necessary to establish a sound zero in accordance with MCRP 3-01A.
- Given a service rifle, Rifle Combat Optic (RCO), load bearing vest, magazine pouch, common weapon sling, (2) magazines, cleaning gear, ammunition, and a target, understand the RCO sighting system in accordance with MCRP 3-01A.

ENABLING LEARNING OBJECTIVES

- Given a service rifle, Rifle Combat Optic (RCO), load bearing vest, magazine pouch, common weapon sling, (2) magazines, cleaning gear, ammunition, and a target, establish pre-zero sight settings with the service rifle in accordance with MCRP 3-01A.
- Given a service rifle, Rifle Combat Optic (RCO), load bearing vest, magazine pouch, common weapon sling, (2) magazines, cleaning gear, ammunition, and a target, understand the factors affecting a zero in accordance with MCRP 3-01A.

- Method/Media
- Evaluation
- Safety/Cease Training
- Admin Notes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What I will Be Teaching???
How I will Be Teaching???
How You will Be Evaluated???

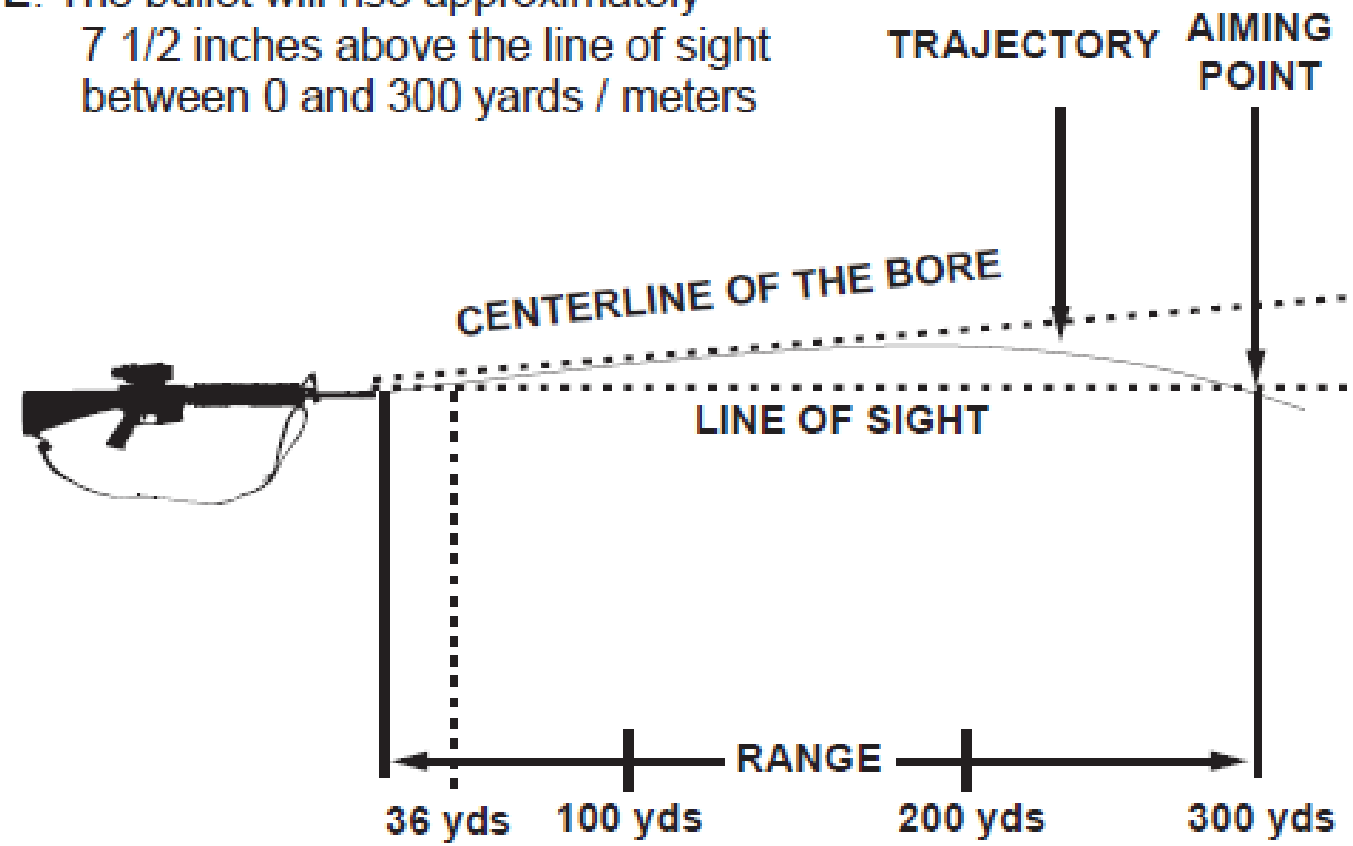
MOUNTING AND UNDERSTANDING THE ELEMENTS TO ESTABLISH A SOUND ZERO

- Definition of a Zero
  A zero is the elevation and windage settings required to place a single shot, or the center of a shot group, in a pre-designated location on a target at 100 yards/meters, from a specific firing position, under ideal weather conditions (i.e., no wind).

- Line of sight
  Line of sight is a straight line beginning at the center of the eye, passing through the center of the optic to the point of aim on the target.

ELEMENTS OF ZEROING

NOTE: The bullet will rise approximately 7 1/2 inches above the line of sight between 0 and 300 yards / meters



THE RCO SIGHTING SYSTEM/WINDAGE AND ELEVATION RULES

- The RCO Sighting System

  The RCO is optically centered when it leaves the manufacturer.

  Windage and elevation adjusters are used to zero the optic. The adjusters can be moved with a coin, bladed screwdriver, or the extractor rim of the 5.56mm casing.

- Dimensions for Zeroing the RCO

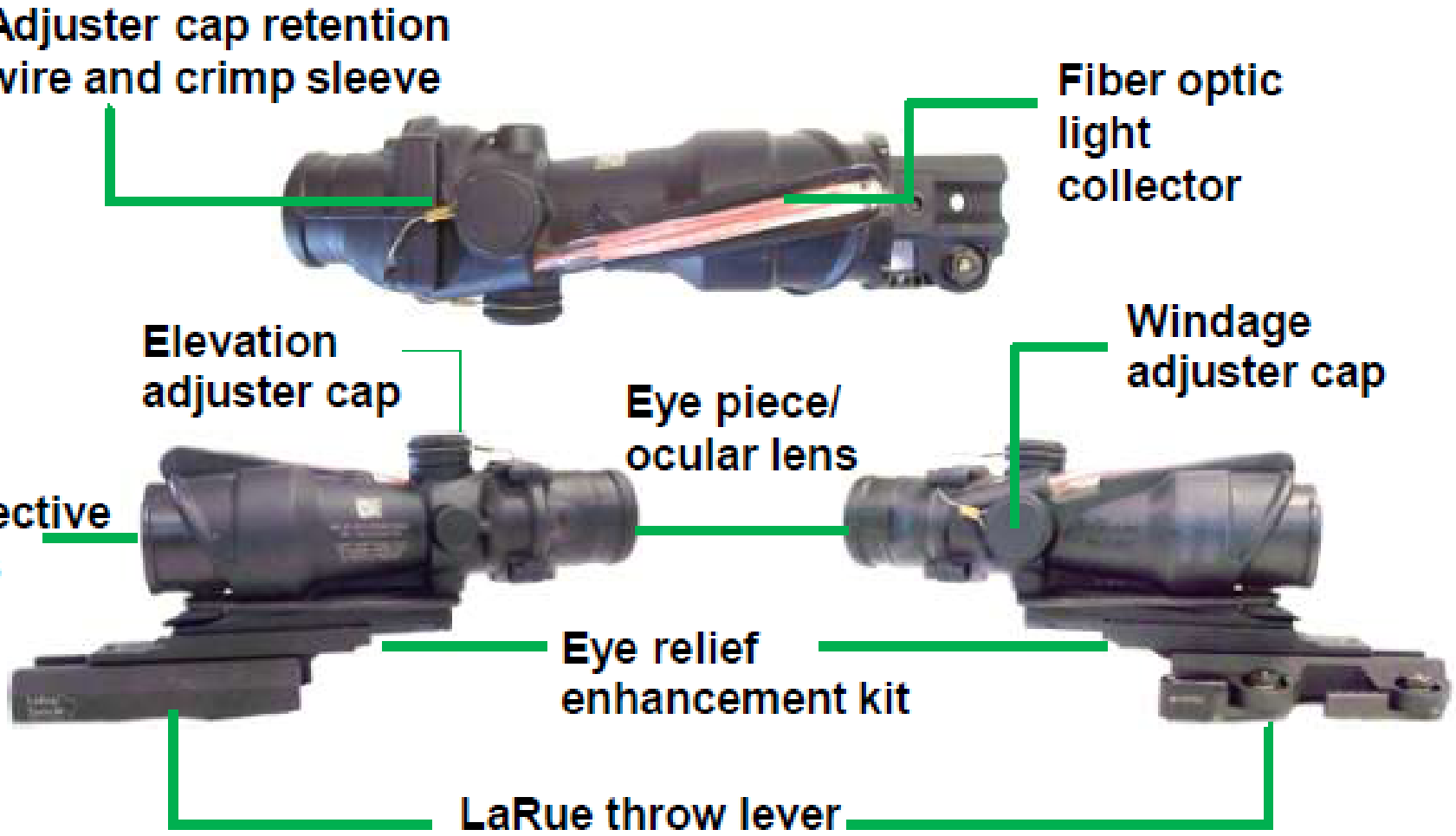
  (a) ‘5V’ ring is 4 inches in diameter.

  (b) The round, black bull's-eye is 12 inches in diameter.

  (c) The 4-ring is 24 inches in diameter.

  (d) The 3-ring is 36 inches in diameter.

RCO NOMENCLATURE (EXTERNAL)



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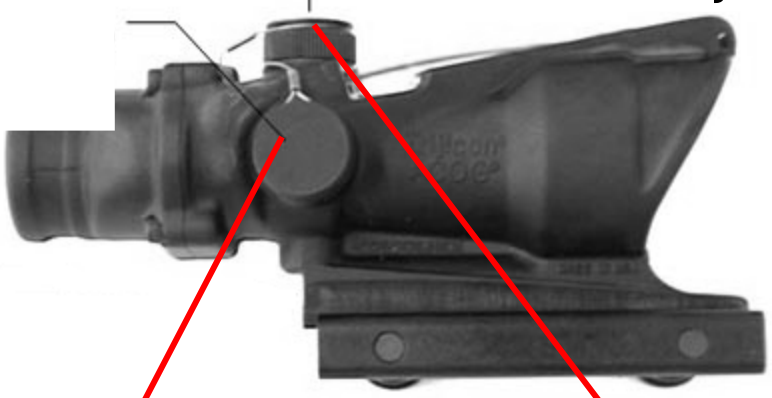
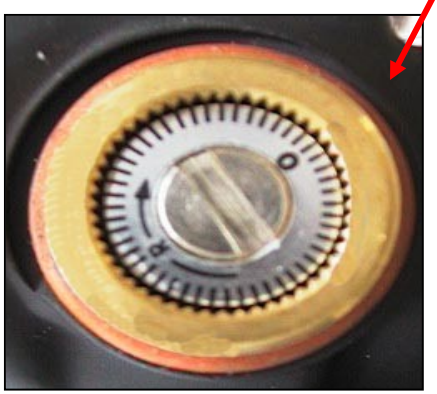
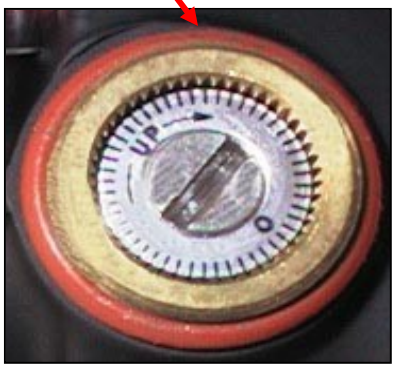
RCO ADJUSTERS

Elevation Adjuster

Windage Adjuster







ZEROING PROCEDURES

- Pre Zero Sight Settings

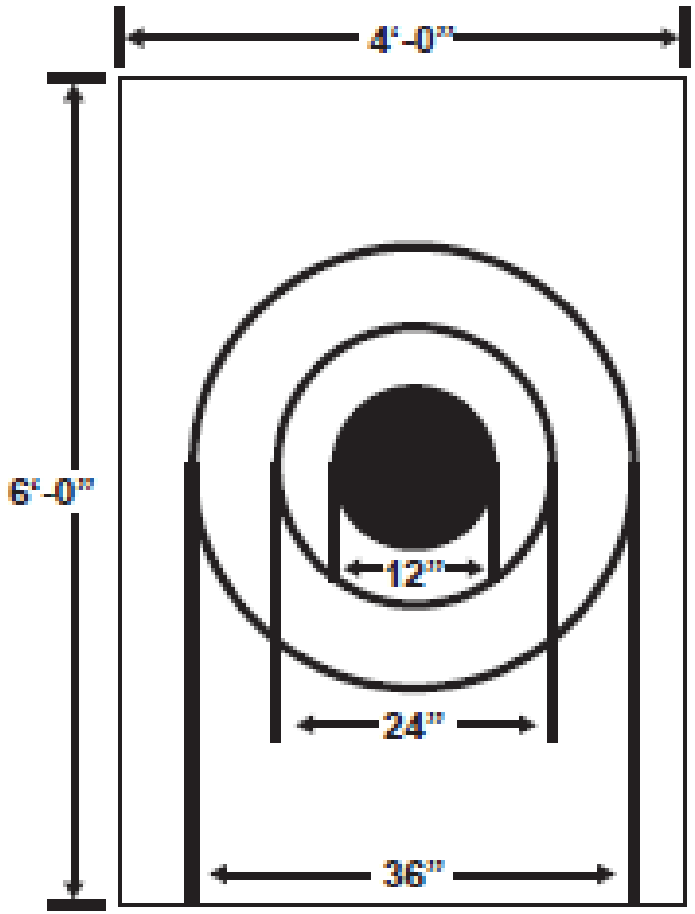
  Pre-zeroing can be accomplished with a small arms collimator (SAC).

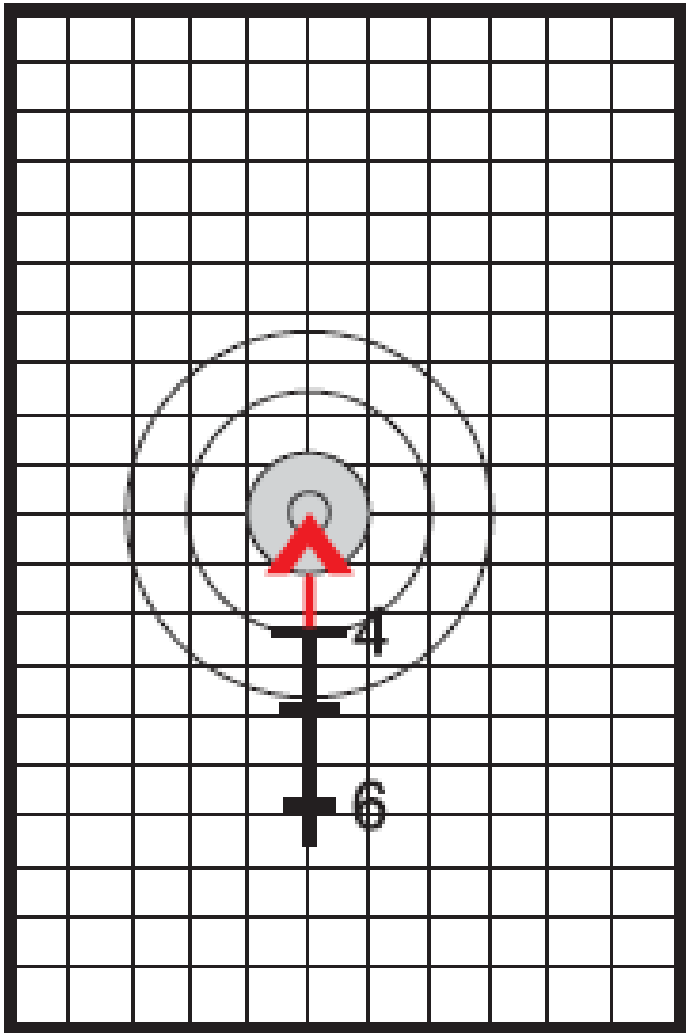
- Zeroing

  Zeroing the RCO is conducted at 100 meters/ yards. A zero is not established by simply getting a pre-zero sight setting.

ZEROING PROCEDURES

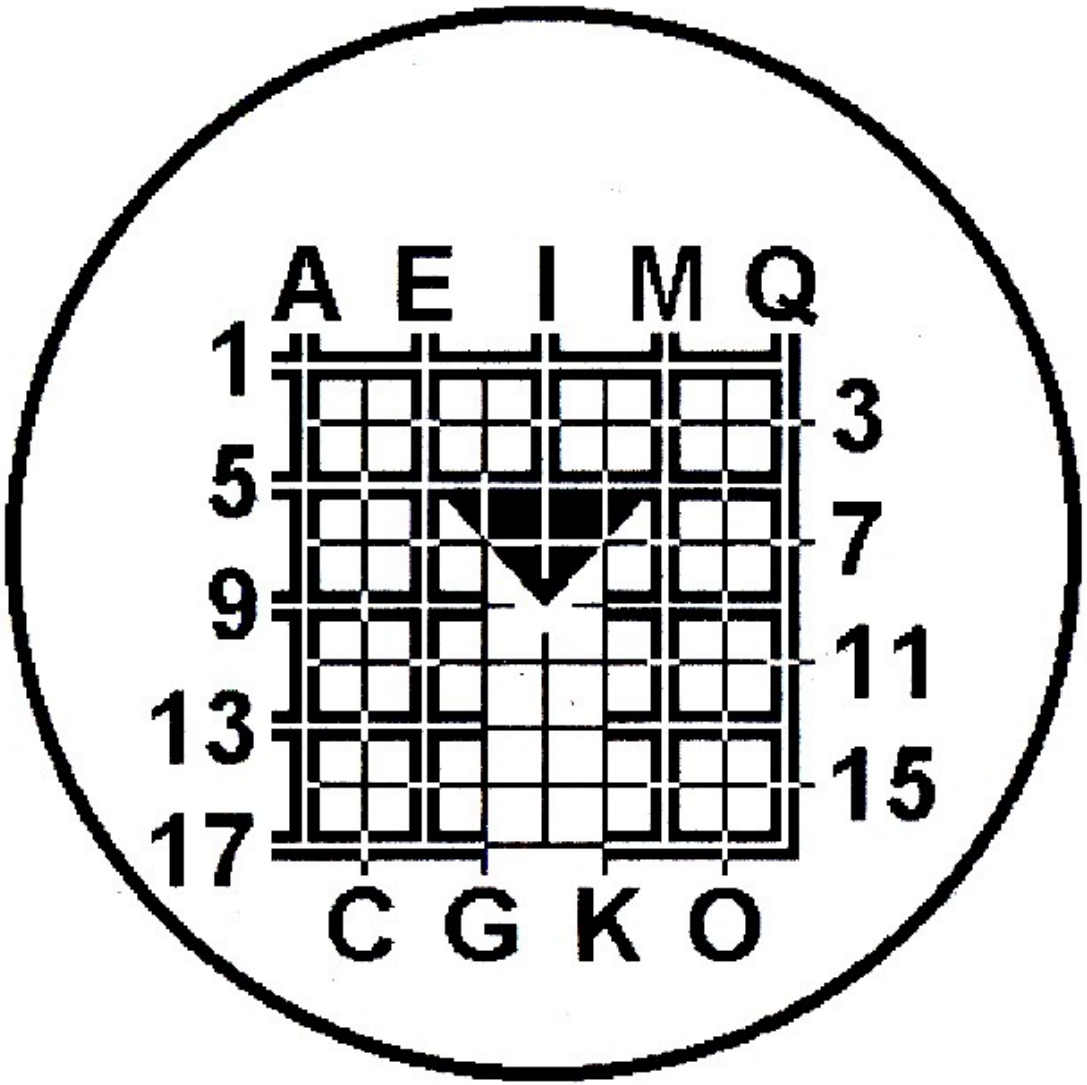
- Place a suitable target with an aiming point 4 inches in diameter contrasting with the background at a range of 100 meters and determine an aiming point.
- Fire five rounds to obtain a shot group in a time limit of 60 seconds.
- Triangulate the shot group to identify the center.
- Make horizontal and vertical adjustments using the windage and elevation knobs on the RCO.

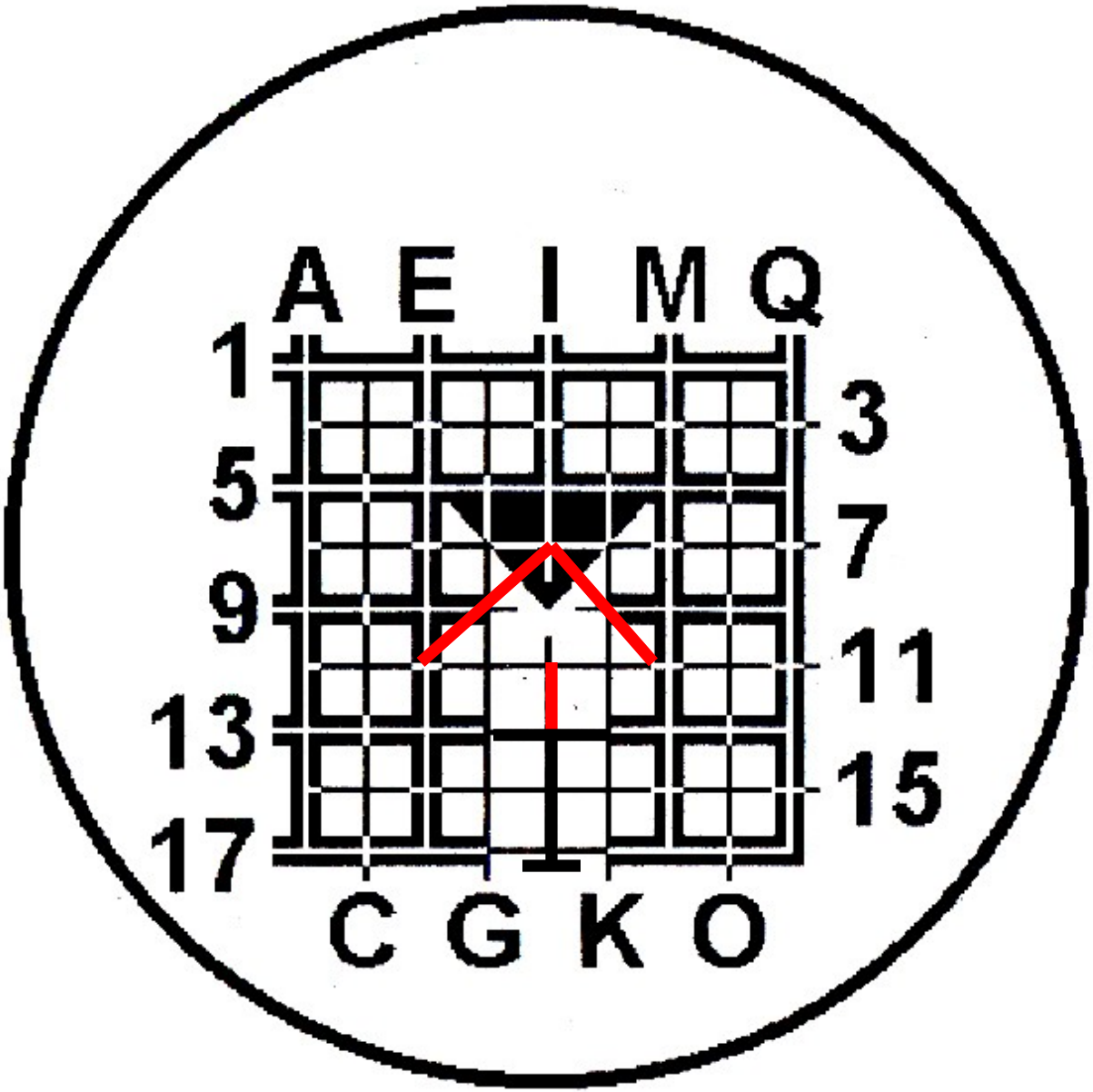




"ABLE" TARGET

SMALL ARMS

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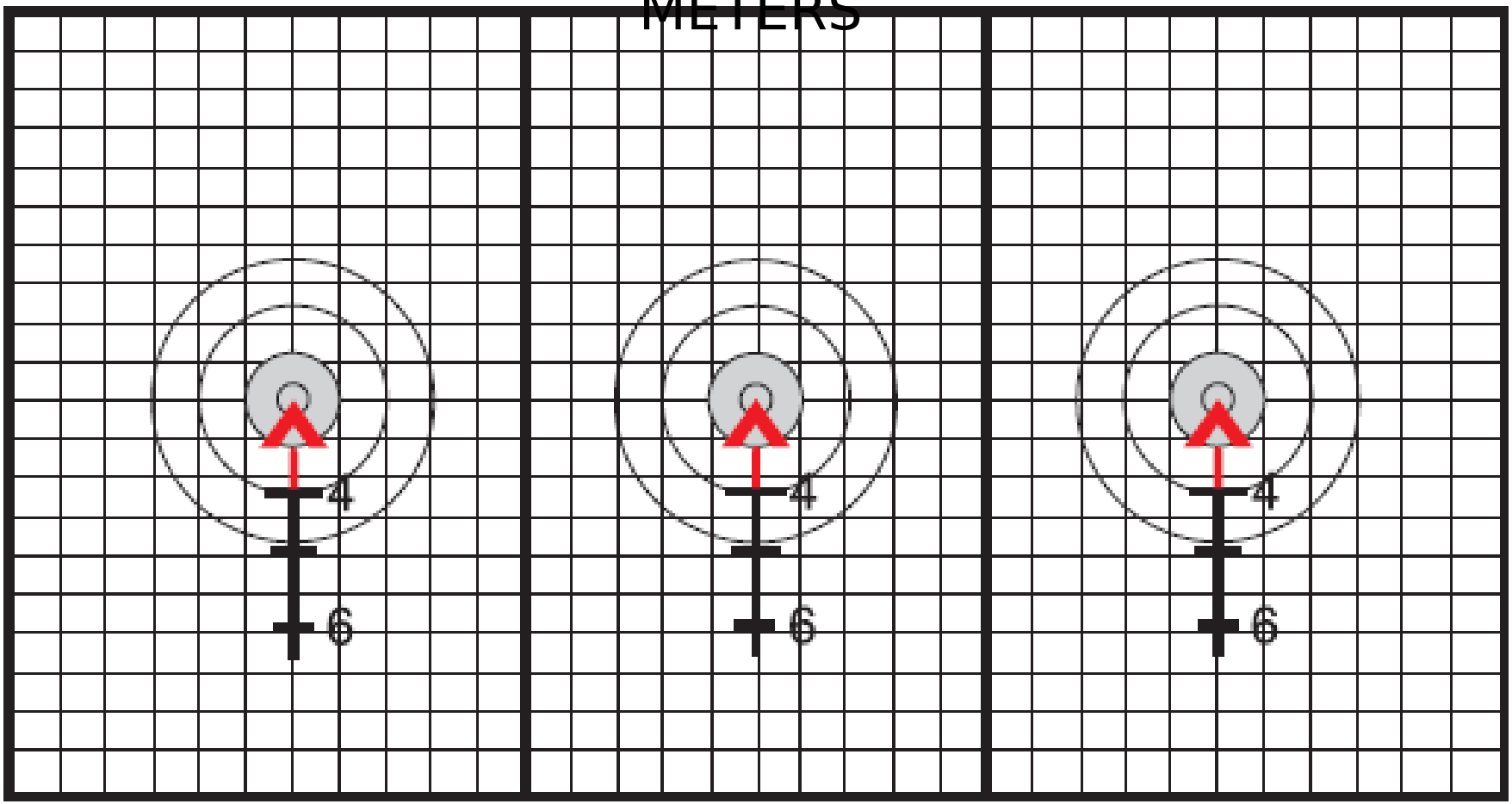
ZEROING

CONFIRM THE ZERO OF THE SERVICE RIFLE AT 100 METERS



3 CLICKS AT 100 METERS = 1 INCH

FACTORS AFFECTING A ZERO

- Factors

  -Placement of support hand

  -Placement of the rifle buttstock in the pocket of the shoulder

  -Grip of the firing hand

  - Firing-side elbow

  -Stock weld

FACTORS AFFECTING A ZERO

- Factors

  -Eye relief

  -Sight picture

  -Muscular control

  -Breathing

  -Trigger control

TABLE 1A COURSE OF FIRE (TRAINING)

	Drill	Time (min)	Distance	Target	Rounds	Position
Stage One	Slow Fire	25	200	"A"	5	Sitting
			200	"A"	5	Kneeling
			200	"A"	5	Standing
			200	"A"	5	Choice of Above
Stage Two	Rapid Fire	1	200	"D"	10	Standing to Sitting
		1	200	"D"	10	Standing to Sitting
Stage Three	Slow Fire	5	300	"A"	5	Sitting
Stage Four	Rapid Fire	1	300	"D"	10	Standing to Prone
		1	300	"D"	10	Standing to Prone
Stage Five	Slow Fire	15	500	"B-MOD"	15	Prone
				Total	90	

TABLE 1A COURSE OF FIRE (EVALUATION)

	Drill	Time (min)	Distance	Target	Rounds	Position
Stage One	Slow Fire	20	200	"A"	5	Sitting
			200	"A"	5	Kneeling
			200	"A"	5	Standing
Stage Two	Rapid Fire	1	200	"D"	10	Standing to Sitting
Stage Three	Slow Fire	5	300	"A"	5	Sitting
Stage Four	Rapid Fire	1	300	"D"	10	Standing to Prone
Stage Five	Slow Fire	10	500	"B- MOD"	10	Prone
				Total	60	

FACTORS THAT CAN AFFECT THE ACCURACY OF A ZERO

STOCKWELD AND EYE RELIEF (5)

BUTT OF WEAPON HIGH IN POCKET OF SHOULDER (2)

(1) FORWARD HAND RELAXED AND ELBOW CLOSE TO THE WEAPON (PROVIDING VERTICAL BONE SUPPORT)

(6) BREATHING

(7) MUSCULAR CONTROL

(3) HIGH FIRM PISTOL GRIP

PLACEMENT OF REAR ELBOW (4)

Natural Point of Aim	Natural point of aim is the point at which the rifle sights settle when bone support and muscular relaxation are achieved. The marksman will always check it (and adjust as necessary) every time a position is built.

SUMMARY

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